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Remarks

Claims 1-16 were in the application as filed and examined. By these amendments, claims 7-16 are canceled without prejudice. Claims 1, and 4-6 are amended, and new claims 17-35 are added. In addition, the specification is amended to render the Summary of the Invention and the Abstract consistent with the scope of the claims as amended.

Restriction

Applicant affirms the provisional election to prosecute claims 1-6 (Group I) in response to the restriction requirement. By the foregoing amendments, claims 7-16 have been canceled without prejudice, thereby rendering moot the restriction.

Claim Rejections – 35 USC §112

Claim 5 stands rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The rejection is respectfully traversed.

Applicant has amended claim 5 to clearly identify a winding axis and its orientation relative to the shaft longitudinal axis. Support therefore can be found in the specification at paragraphs [0056] and [0099]. It is believed that the amendments render the claim sufficiently clear under 35 USC § 112.

Claim Rejections – 35 USC §103

Claims 1 - 3 stand rejected under 35 USC § 103 as being unpatentable over Tohiyasu in view of either Grenzer or Janette. These rejections are respectfully traversed.

There is no basis for making alleged combinations. Tohiyasu discloses nothing more than the substance of the preamble in claim 1. Grenzer discloses the construction of a rotor for a squirrel-cage motor wherein laminations are stacked on a temporary mandrel, and subjected to pressure (p. 1, ll. 52-55), first on the outer periphery (p. 1, ll. 67-70), and then, after inserting a shaft in place of the mandrel, on the inner diameter to a desired, unspecified pressure (p. 1, ll. 83-

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90). There is some give in the laminations during a subsequent riveting process (p. 2, ll. 56-59). Janette discloses a toothed ring pressed onto a shaft closely against laminations to lock them onto the shaft (ll. 40-50).

Applicant has no English translation of Tohiyasu other than an English translation of the abstract, but nothing in the drawings or the abstract suggests subjecting the died cores to pressure (ala Grenzer) or locking the died cores on the shaft by a toothed ring (ala Janette). Conversely, nothing in Grenzer or Janette suggests a combination with Tohiyasu. Nor is there any motivation for making such a combination. Tohiyasu teaches only "fixing" the died cores to the shaft, and it is irrelevant to the problem Tohiyasu addresses how the died cores are so fixed. Thus, it is nothing more than hindsight to make the alleged combinations, there being no teaching, suggestion or motivation for doing so.

Even if any of the alleged combinations were tenable, they would still not reach Applicant's invention. None of the references, singly or in combination, teach or suggest the range of compression set forth in Claim 1. These levels of compression are necessary to inhibit bending of the shaft that might cause the windings to contact the magnets. As can be appreciated from the specification, it would take little bending to render the motor useless since the space between the windings and the magnets is 1mm or less over 20 inches of length. Grenzer is the only one of the cited references to discuss pressure on the laminations, but the level of pressure is not mentioned and there remains a suggestion that there is some give to the bundle of laminations. Because the compression range of claim 1 is not taught or suggested by the references, singly or in combination, claim 1 is patentable over the alleged combinations. Likewise, claims 2 and 3 are also patentable.

Claims 5 and 6 stand rejected under 35 USC § 103 as being unpatentable over Tohiyasu in view of either Grenzer or Janette as applied to Claim 1 and further in view of Neuenschwander. These rejections are respectfully traversed.

Neuenschwander teaches a lamina stack where each individual lamination has a projection and depression that interlocks with adjacent projections and depressions. A method is disclosed for making the projections and depressions so that the resulting lamina stack can be

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skewed. Nothing in Neuenschwander or any of the other cited references teach or suggest making the alleged combination. Nothing in the references raises any motivation to make the alleged combination. The examiner mentions that the combination would have compensated for variations in lamina thickness, but this is an illusory problem, not identified in any cited reference or in the application. The examiner has simply cited no real reasons why one of ordinary skill in the art would be led to make the alleged combination without the benefit of the examiner's hindsight reconstruction of Applicant's invention.

Moreover, even if the combination were tenable, it would still not reach the invention. Neuenschwander teaches nothing about a winding axis, much less a winding axis at least 10 degrees off the shaft longitudinal axis. That applying Neuenschwander's method within an undefined range of skew angles may encompass 10 degrees is not a teaching or suggestion that a winding axis be at least 10 degrees off the shaft axis. The angle would be nothing more than a fortuitous and unrelated overlap. Because a non-parallel winding axis, and one of at least 10 degrees are not taught or suggested by the alleged combination, claims 5 and 6 are patentable over the cited references.

Claims 1 and 4 stand rejected under 35 USC § 103 as being unpatentable over Tohiyasu in view of Sargeant. These rejections are respectfully traversed.

Sargeant discloses a stator core clamped together by bolts in a way to reduce temperature dependent variations in the clamping pressure. Again, there is no teaching, suggestion or motivation for making the alleged combination. The examiner suggests a common problem, to-wit: reducing temperature induced expansion of the stator, which would inherently inhibit bending of the shaft. But Tohiyasu raises no concern with the problem of temperature induced expansion, and there is no reason to think that one ordinarily skilled in the art would make the same leap unless he (or she) were concerned about that same problem. Indeed, Applicant's invention is concerned with an entirely different problem, i.e., *any and all* external forces that would act on the shaft to cause it to bend, especially including magnetic forces because of the powerful neodymium magnets used in the rotor, and the close tolerances between the stator and the rotor. Applicant's stator must have sufficient compression to inhibit bending due to external

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forces (not just temperature induced expansion, even if there were any in applicant's invention).
The alleged combination is impermissible hindsight reconstruction of the claims.

Even if the combination were tenable, it would still not reach the invention. Nothing in any of the references teaches or suggests the range of compression in claim 1 or holding that range of compression by a lock nut on the shaft. Certainly nothing in Tohiyasu or Sargeant suggests these concepts. Because they are taught or suggested by the references, claim 1 and 4 are patentable over the references.

The application is now in condition for allowance and prompt notice of allowability is respectfully requested. Any questions concerning the amendments or the application can be directed to the undersigned by email or by telephone.

Respectfully submitted,

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